WHAT IS CLAIMED IS:

1. An apparatus for transmitting signals between UWB networks, comprising:

a signal converter for converting received optical signals from another UWB

5   network into UWB signals, transmitting the converted optical signals within a UWB

network, and converting UWB signals generated from within the UWB network into

optical signals; and

an optical signal transmission means for directing the received optical signals the

signal converter and a further UWB network.

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2. The apparatus as claimed in claim 1, further including a first port for receiving

optical signals from the other UWB networks.

3. The apparatus as claimed in claim 1, further including a second port for

15   outputting the optical signals to other UWB networks.

4. The apparatus as claimed in claim 1, wherein the optical signal transmission

means is a photocoupler.

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5. An apparatus for transmitting signals between UWB networks, comprising:

an optical switch for transmitting received optical signals from an other UWB network to a signal converter and an output port to further UWB networks, wherein the signal converter converts the received optical signals into UWB signals, transmits the

5 converted optical signals within a UWB network, and converts UWB signals generated within the UWB network into optical signals.

6. The apparatus as claimed in claim 5, wherein the optical switch includes a controller.

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7. The apparatus as claimed in claim 5, wherein the optical switch stores a predetermined identification number and transmits the received optical signal to the signal converter only when a destination identification number in the received optical signal corresponds to the predetermined identification number.

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8. The apparatus as claimed in claim 5, wherein the optical switch is a passive device.

9. The apparatus as claimed in claim 8, wherein the optical switch further includes

20 sensors.

10. The apparatus as claimed in claim 8, wherein the optical switch further includes a CSMA/CA method